Turkish Journal of Geriatrics
2014; 17 (3) 278-284

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RESEARCH

ADAPTATION OF ELDERLY DIABETIC PATIENTS TO ACTIVITIES OF DAILY LIFE AND EVALUATION OF THEIR SELF-CARE ABILITIES

ABSTRACT

Introduction: The aim of this study was to evaluate the adaptation of elderly diabetic patients to activities of daily life and their self-care abilities.

Materials and Method: This study was a descriptive survey conducted 1068 patients with Type 2 diabetes who applied to the Internal Medicine Polyclinic of Kars State Hospital between March 2012 and December 2013. The sample group was composed of 1045 patients aged 60 and older, who agreed to participate in the study, had been diagnosed with Type 2 Diabetes for at least 1 year, and were able to communicate. A Personal Information Form, Self-Care Ability Scale, and Instrumental Activity of Daily Living index were used as data collection tools.

Results: We found that 27.3% of patients had a deficiency in seeing, 70.8% hearing, 56.9% moving, and 74.5% tasting; 63.4% used an instrument/prosthesis/device and 74.5% used a walking stick. Evaluating the distribution of patients' states of dependence according to their physical deficiency, it was determined that while patients who had problems with seeing, hearing, moving, and tasting were not able to fulfill their activities of daily life independently, those using auxiliary instruments had difficulty in fulfilling their activities of daily life independently.

Conclusion: Patients experienced deficiencies in activities of daily life, tried to complement their physical deficiencies through the use of auxiliary instruments, and also had low mean scores for self-care ability.

Key Words: Diabetes Mellitus; Activities of Daily Living; Self Care.

ARAŞTIRMA

YAŞLI DİYABET HASTALARININ GÜNLÜK YAŞAM AKTİVİTELERİNE UYUMU VE ÖZ BAKIM GÜCÜNÜN DEĞERLENDİRİLMESİ

ÖZ

Giriş: Bu araştırma yaşlı diyabet hastalarının günlük yaşam aktivitelerine uyumunu ve öz bakım gücünü değerlendirilmesi amacıyla yapılmıştır.

Gereç ve Yöntem: Tanımlayıcı olarak yapılan bu araştırmanın evrenini Mart 2012- Aralık 2013 tarihleri arasında Kars Devlet Hastanesi Dahiliye Polikliniklerine baş vuran 1068 Tip 2 Diyabet hastası, çalışma grubunu ise araştırmaya katılmayı kabul eden, iletişime açık, en az 1 yıldır Tip 2 Diyabet tanısı alan, 60 yaş ve üstü 1045 hasta oluşturmuştur. Çalışma verilerinin toplanmasında hastaların tanıtıcı özelliklerini içeren Kişisel Bilgi Formu, Günlük Yaşam Aktiviteleri Ölçeği ve Öz-Bakım Gücü Ölçeği kullanılmıştır.

Bulgular: Hastaların %27.3'ünün görme, %70.8'inin işitme, %56.9'unun hareket, %74.5'inin tat almada yetersizlik yaşadığı, %63.4'ünün Alet/Protez/cihaz kullandığı, %74.5'inin baston kullandığı saptanmıştır. Hastaların fiziksel yetersizliğine göre bağımlılık durumlarının dağılımına bakıldığında; görme, işitme, hareket, tat alma sorunu yaşayanlarda bağımsız olarak günlük yaşam aktivitelerini yapmakta yetersiz oldukları, yardımcı araç-gereç kullananlarda ise günlük yaşam aktivitelerini yine bağımsız bir şekilde yerine getirmekte zorluk yaşadıkları saptanmıştır. Tip 2 Diyabete özgü bağımlılık durumları incelendiğinde 11 yıldan fazla süredir diyabet hastası olanlar, kan glikoz seviyesini düzenli ölçmeyenler, diyabetten başka hastalığı olmayanlar, diyabete ilişkin komplikasyon yaşayan hastaların bağımsız olarak günlük yaşam aktivitelerini yapmakta yetersiz oldukları saptanmıştır.

Sonuç: Hastaların günlük yaşam aktivitelerinde yetersizlik yaşadıkları, yardımcı alet kullanarak fiziksel yetersizliklerini tamamlamaya çalıştıkları ve Öz bakım gücü puan ortalamalarının düşük olduğu bulunmuştur.

Anahtar Sözcükler: Diyabet; Günlük Yaşam Aktiviteleri, Öz Bakım.

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Geliş Tarihi: 31/03/2014
(Received)

Kabul Tarihi: 02/06/2014
(Accepted)

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Introduction

Diabetes is a chronic disease that lasts a lifetime, directly concerns individuals of all ages, affects self-care activities due to its irreversible and chronic damage and shortens the length of life (1). It is of primary importance to meet the physical needs of individuals with a chronic disease. In particular, impairment of activities of daily life (ADL) and restriction of physical activities cause the greatest disturbance for these patients (2). ADL are mainly involved in physical functions and comprise the entire life. ADL are divided into two main subgroups: basic (mobility, self-care activities) and auxiliary (preparing food, driving, shopping, going to work) (3,4). It has been reported that complications such as muscular force deficiency, peripheral arterial disease, peripheral nerve injury and depression, anxiety, diminished self-confidence, personal awareness level and negative beliefs about the disease cause insufficiencies in the ADL of diabetic patients (5). Although it is a physical disease, diabetes also has psychosocial dimensions and leads to a series of physical, emotional, social and sexual problems and conflicts (5,6). This process causes diabetic individuals to encounter barriers at several different levels. Disability is the failure to lead a life that is accepted as normal according to the age, gender, social and cultural state of the person, due to inability or impairment. It involves malfunctions and failures in social life. In other words, disability is an individual's loss of freedom due to pathology (7). Self-care, on the other hand, includes the actions of individuals to protect their personal life, health, and well-being. The target in self-care is to enable the individual to take on all responsibilities concerning her/his own health (8). It is important to meet self-care needs in individuals with a chronic disease like diabetes. The majority of individuals diagnosed with diabetes are obliged to follow and apply arrangements concerning self-care at some stages of their lives (7). Thus, nurses should evaluate the efficiency of a patient's self-care activities with observation and interview techniques (5). Regarding the psychosocial problems of diabetes, care principles of the nurse involve enabling the patient to manage her/his disease, adapt to his/her own self-care behaviors, increase her/his independence and self-esteem, and cope with stressors that might affect the blood glucose level (8).

The aim of this study was to evaluate the adaptation of elderly diabetic patients to activities of daily life and their self-care abilities.

Materials and Method

This study was a descriptive survey consisting of 1068 patients with Type 2 diabetes who applied to the Internal Medicine Polyclinic of Kars State Hospital between March 2012 and December 2013. The study was conducted with 1045 patients who were present at the polyclinic. The patients were aged 60 and older, had been diagnosed with Type 2 Diabetes for at least 1 year, and were open to communication and were conscious and consented to participate in the study. 97.8% of patients who were selected for the sample group participated in the study. Before data collection began, patients were informed about the purpose of the study and asked to give verbal consent to participation in it. A convenient time was determined with patients who agreed to participate in the study and the questionnaires were administered by researchers for 45 minutes.

Data Collection

A Personal Information Form, including the descriptive features of the patients, the Index of Activities of Daily Life and the Self-Care Ability Scale were used for data collection.

Personal Information Form

This form was prepared by researchers in line with a literature review. The personal information form includes information about socio-demographic variables, metabolic and clinical parameters and diabetes history of the patients (6-8).

Self-Care Ability Scale

This scale measures how the individual perceives his or her ability to carry out the activities required to sustain her/his health. It was developed by Kearney and Fleicher (1979) (9) and adapted for the Turkish population by Nahçıvan (1993) (10). The self-care ability scale involves 35 items and each statement is scored from 0 to 4 as follows: 4 points for "It defines me well", 3 points for "It defines me a little", 2 points for "I have no idea", 1 point for "It does not define me much" and 0 points for "It does not define me at all". 8 statements (3, 6, 9, 13, 19, 22, 26, 31) are presented as negative and the scoring is reversed. The score obtained from the test reflects the extent of the individual's ability to sustain her/his health and well-being. The maximum score, showing the highest degree of self-care ability, is 140. The levels of self-care ability are as follows: 24–64 poor, 65–100 moderate, 101–112 good, 113–140 very good.

Independence in Activities of Daily Living (IADL): The Index of Independence in Activities of Daily Living was developed by Shelkey and Wallace (11). The IADL /AGYA Scale is aimed at determining which of 14 activities (bathing, dressing, using the toilet, standing up-sitting down, leaking urine and stool, eating, phoning, shopping, preparing food, doing the laundry, using transportation, taking drugs, and using money) are essential to the patient's personal care, are complex needs within the patient's environment that require independence, and can or cannot be performed by the individual. The IADL /AGYA expresses being dependent in activities with '0' points and independent with '1' point, and is evaluated on the basis of a total of 14 points (6 points in IADL and 8 points in AGYA). On this index, a score of 0-7 is considered insufficient, while a score of 8-14 is considered sufficient.

Data Evaluation

The data were analyzed using SPSS (Statistical Package for the Social Sciences) 15, on the computer. Number, percentages, means, and Pearson's correlation analyses were used to assess the data.

Table 1— Socio-Demographic Characteristics of Patients

Variables	Number	%
Gender		
Female	543	54.3
Male	502	45.7
Educational Status		
Illiterate	280	26.8
Literate	475	45.5
Primary school	181	17.4
High school and above	109	10.3
Marital Status		
Married	649	62.2
Single	396	37.8
Levels of Income		
More income than expenditure	221	21.2
Equal income and expenditure	355	34.0
Less income than expenditure	469	44.8
Number of children		
None	142	13.6
1-2 children	304	29.1
3 children and more	599	57.3
Patient's residence		
Province	447	42.8
District	247	23.7
Village	351	33.5
TOTAL	**1045**	**100**

Ethical Dimension of the Study

We obtained written permission from the Provincial Directorate of Health, with which the state hospital where the study was conducted was registered, and verbal permission from patients who participated in the study.

RESULTS

Patients who participated in the study had an average age of 68.35±9.24; 54.3% were women, 67.3% were married, 45.5% were literate, 44.8% had less income than expenditure, 57.3% had 3 or more children, and 42.8% lived in the city center (Table 1).

It was determined that 53.7% of patients had been diagnosed with diabetes for 11 years or more, 64.3% did not get their blood glucose checked regularly, 65.6% had another disease apart from diabetes, and 54.7% received insulin treatment. The average disease period of patients was determined as 10.34±5.18 years, average BMI was 26.4±4.45, and average HbA1c was 8.34±3.65. It was also determined that 27.7% of patients had diabetic retinopathy, 22.1% had nephropathy, 33.2% had cardiovascular problems, 28.3% had neuropathy, and 10.6% had diabetic foot (Table 2).

Table 2— Features of Patients Concerning the Disease

Variables	Number	%
Diagnosis time		
1-5 years	219	21.0
6-10 years	264	25.3
>11 years	562	53.7
State of regularly checking blood glucose		
Yes	671	64.3
No	374	35.7
State of having another disease apart from diabetes		
Yes	685	65.6
No	360	34.4
Treatment type		
Diet	126	12.1
Oral antidiabetic	346	33.2
Insulin	573	54.7
*Diabetes-associated complications		
Retinopathy	289	27.7
Nephropathy	230	22.1
Neuropathy	295	28.3
Cardiovascular problems	346	33.2
Diabetic foot	110	10.6
TOTAL	**1045**	**100**

*Patients with multiple complications

Table 2— Distribution of Physical Deficiency Features and Activities of Daily Life of Patients in Terms of the States of Being Affected

Physical Deficiency	Affected		Not Affected	
	Number	%	Number	%
Deficiency type				
Seeing	237	69.3	106	30.1
Hearing	166	65.7	87	34.4
Moving	127	56.9	96	43.1
Tasting	136	60.1	90	39.9
Use of Instrument/Prosthesis/Device				
Using	488	81.8	108	18.2
Not Using	359	79.9	90	20.1
Type of Instrument/Prosthesis/Device				
Glasses	235	82.4	50	17.6
Hearing aid	247	71.8	97	28.2
Extremity prosthesis	108	56.8	82	43.2
Walking stick	178	78.7	48	21.3

We found that 27.3% of patients had a deficiency in seeing, 70.8% in hearing, 56.9% in moving, and 74.5% in tasting; 63.4% used an instrument/prosthesis/device and 74.5% used a walking stick (Table 3).

Evaluating the distribution of patients' states according to their physical deficiency, we determined that while patients who had problems with seeing, hearing, moving, tasting were not able to fulfill their activities of daily life independently, those using auxiliary instruments (glasses, hearing aid, prosthesis, walking stick) had difficulty in fulfilling their daily life activities independently (Table 4).

Examining the relationship between the features of Type 2 Diabetes and the dependence level; it was determined that patients who had had diabetes for more than 11 years, did not regularly take their blood glucose levels, had no other disease than diabetes, and experienced diabetes-related complications remained insufficient in carrying out their daily life activities independently (Table 5).

Table 4— Distribution of Dependence States of Patients according to Their Physical Deficienciesd

	DLA Dependence State								
	Fully Dependent		Fully Dependent		Fully Dependent		Fully Dependent		
	Number	%	Number	%	Number	%	Number	%	p
Deficiency type									
Seeing	142	37.3	95	40.0	106	22.7	343	32.8	.001
Hearing	54	21.3	112	44.2	87	34.5	253	24.2	
Moving	53	23.7	74	33.1	96	43.2	223	21.3	
Tasting	70	30.9	66	26.5	90	42.6	226	21.7	
Use of Instrument/Pros-thesis/Device									
Using	296	81.1	192	49.0	108	54.6	596	57.0	.963
Not Using	69	18.9	200	51.0	90	45.4	449	43.0	
Type of Instrument/Pros-thesis/Device									
Glasses	167	58.6	68	23.8	50	17.6	285	27.2	.001
Hearing aid	136	39.5	111	32.2	97	28.3	344	32.4	
Extremity prosthesis	98	51.5	92	48.4	82	43.1	190	18.8	
Walking stick	125	55.3	53	23.4	48	21.3	226	21.6	

Table 4— Distribution of Dependence States of Type 2 Diabetes according to Their Physical Deficiencies

	DLA Dependence State								
	Fully Dependent		Fully Dependent		Fully Dependent		Fully Dependent		
	Number	%	Number	%	Number	%	Number	%	p
Diagnosis time									
1-5 years	45	10.1	50	12.6	70	33.8	165	15.7	.001
6-10 years	153	34.4	135	34.3	50	24.1	338	32.3	
>11 years	246	56.5	209	53.1	87	42.1	542	52.0	
State of regularly checking blood glucose									
Yes	163	30.1	100	28.1	70	47.2	333	57.0	.001
No	378	69.9	256	71.9	78	52.8	712	43.0	
State of having another disease apart from diabetes									
Yes	95	22.2	102	34.5	203	62.8	400	38.2	.001
No	332	77.8	193	65.5	120	37.2	645	61.8	
Treatment type									
Diet	100	10.1	105	12.6	103	30.5	308	15.7	.976
Oral antidiabetic	133	34.4	115	34.3	120	35.6	368	32.3	
Insulin	136	56.4	119	53.1	114	33.9	369	52.0	
Diabetes-associated complications									
Retinopathy	110	20.3	75	23.8	50	26.3	235	22.4	.001
Nephropathy	80	14.8	60	19.0	40	21.3	180	17.2	
Neuropathy	90	16.6	50	15.8	30	15.7	170	16.2	
Cardiovascular problems	95	17.5	60	19.0	40	21.0	195	18.6	
Diabetic foot	165	30.8	70	22.4	30	15.7	265	25.6	

Discussion

It was determined that 64.3% of the patients did not get their blood glucose levels checked regularly and that 65.6% had one or more chronic disease apart from diabetes. The literature indicates that the presence of chronic diseases accompanying diabetes cause a decrease of glycemic control in patients, limitation of their lives, negative changes primarily in nutrition and lifestyle, and difficulty taking responsibility for self-care (12-15).

This study revealed that a great majority of patients experienced complications associated with diabetes, which prevented them from meeting their activities of daily life and self-care needs independently. Furthermore, of the patients who had a low mean score on the IADL, (4.23±1.44), 69.3% had vision problems and 82.4% used glasses. 81.8% of patients performed their daily activities with the help of auxiliary instruments (hearing aid, prosthesis, walking stick). There have been various studies on daily life activities of diabetic patients. Choi et al. (2014) stated that individuals with Type II diabetes encountered physical deficiencies 2.5 times more often than healthy individuals (16). In a study investigating the physical deficiency level in diabetic individuals aged 60 and older, it was determined that patients experienced a high-level difficulty in walking, climbing the stairs and doing housework (17). Similarly, a study evaluating disability associated with diabetes in elderly women also determined that participants experienced serious levels of disabilities in both basic daily life activities (such as bathing) and auxiliary daily life activities (such as phoning) (18). In their study on the expectations of elderly patients with Type II diabetes with respect to healthcare, Huang et al. established that these expectations mainly involved primary and independently fulfilling daily life activities (19). In their study on the participation of healthy and diabetic individuals in activities of daily living, Wu et al. determined that more than 74% of diabetic individuals were insufficient in their basic daily life activities and more than 50% were insufficient in auxiliary daily life activities (20). Our study showed that patients with Type 2 diabetes experience different levels of limitations in

activities of daily life, which was consistent with the literature (21).

This study revealed that patients had a low average score on the Self Care Ability Scale (63.34± 9.28). According to Orem, an individual is required to have sufficient self-care ability to meet her/his self-care needs (22). Self-care ability is the skill of carrying out the health activities necessary to sustain life, health and well-being (22,23). The skill of a diabetic individual to know, start, sustain and manage insulin or oral antidiabetic drugs indicates her/his self-care ability (23,24). In their studies, Özkan and Duna (25) and Karakurt et al. (26) also found that diabetic patients had low self-care ability. The health and disease perception of an individual affects her/his behaviors. It has been observed that the severity of an individual's disease, whether she/he considers the suggestions useful or not, and her/his beliefs and attitudes on this subject affect her/his active participation in arrangements concerning the disease; when these things are ignored, the interventions are ineffective (23).

Examining the relationship between the features of Type 2 Diabetes and the dependence level in our study; it was determined that those who had had Type 2 Diabetes for more than 11 years, did not regularly take their blood glucose levels, had no other disease than diabetes and experienced diabetes-related complications such as retinopathy and diabetic foot were dependent in sustaining their daily life activities. In literature, it is indicated that as the period of diabetes extends, it gets more difficult for the patient to comply with daily life activities (16-19). It was determined that diabetic patients regularly taking their blood glucose levels had increased levels of self-care ability and it became easier for them to adapt daily life activities, and also the prevalence of complications caused by diabetes was considerably little (22-25).

Conclusion

In this study, conducted to determine the adaptation levels of elder diabetic patients with respect to their activities of daily life and self-care ability, it was determined that: patients experienced deficiencies in daily life activities, tried to complement their physical deficiencies using auxiliary instruments; and had low mean scores in self-care ability. Given these results, it is recommended that health care professionals determine the factors that decrease or increase the self-care skills of patients, and conduct relevant studies with larger groups.

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